



National Aeronautics and Space Administration
Goddard Space Flight Center

Wallops Flight Facility, Wallops Island, Virginia

Inside Wallops

Volume XIX-99

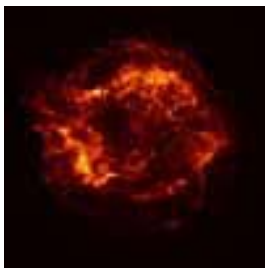
Number 33

September 7, 1999

NASA Unveils First Images From Chandra X-Ray Observatory

Extraordinary first images from NASA's Chandra X-ray Observatory trace the aftermath of a gigantic stellar explosion in such stunning detail that scientists can see evidence of what may be a neutron star or black hole near the center. Another image shows a powerful X-ray jet blasting 200,000 light years into intergalactic space from a distant quasar.

The images confirm that NASA's newest Great Observatory is in excellent health and its instruments and optics are performing up to expectations.



After the telescope's sunshade door was opened, one of the first images taken was of the 320-year-old supernova

remnant Cassiopeia A, astronomers believe was produced by the explosion of a massive star. Material blasted into space from the explosion crashed into surrounding material at 10 million miles per hour. This collision caused violent shock waves, like massive sonic booms, creating a vast 50-million degree bubble of X-ray emitting gas.

Heavy elements in the hot gas produce X-rays of specific energies. Chandra's ability to precisely measure these X-rays tells how much of each element is present. With this information, astronomers can investigate how the elements necessary for life are created and spread throughout the galaxy by exploding stars.

Chandra also imaged a distant and very luminous quasar — a single star-like object — sporting a powerful X-ray jet blasting into space. The quasar radiates with the power of 10 trillion suns, energy which scientists believe comes from a supermassive black hole at its center.

Chandra's image, combined with radio telescope observations, should provide insight into the process by which supermassive black holes can produce such cosmic jets.

"Chandra has allowed NASA to seize the opportunity to put the U.S. back in the lead of observational X-ray astronomy," said Dr. Edward Weiler, Associate Administrator of Space Science, NASA Headquarters. "History teaches us that whenever you develop a telescope 10 times better than what came before, you will revolutionize astronomy. Chandra is poised to do just that."

Wallops Shorts.....

Fire Department

The Wallops Fire Department responded with airbags to the scene of an overturned tractor-trailor just north of Mappsville on Sept. 1. Accomack County 911 requested assistance in freeing a victim trapped in the accident.

Orbital Sciences Corporation Selected To Provide QuikTOMS

NASA has selected Orbital Sciences Corporation (Orbital) to build, launch and operate the Quik Total Ozone Mapping Spectrometer (QuikTOMS). Under terms of the \$15 million fixed price delivery order, Orbital will provide the spacecraft, integrate the previously built TOMS-5 instrument (also supplied by Orbital) and provide three years of mission operations.

QuikTOMS is scheduled to fly on an Orbital four-stage, ground-launched Taurus rocket in August 2000 as a secondary payload. The primary payload is Orbital OrbView 4 satellite.

The delivery order was awarded by NASA Goddard Space Flight Center's Rapid Spacecraft Development Office (RSDO) and will be managed by the QuikTOMS Project Office at Goddard. QuikTOMS is the fourth satellite procured thorough the RSDO.

NASA scientists will use the QuikTOMS instrument to continuously monitor changes in the global ozone as well as sulfur dioxide and ash from large volcanic eruptions, smoke from fires and clearing in tropical rain forests, and the flux of ultraviolet radiation reaching the Earth's surface.

The TOMS spacecraft will be operated from an Orbital ground station at their headquarters in Dulles, Va., and will provide full telemetry, tracking, and command capabilities.

The QuikTOMS satellite is part of NASA's Earth Science Enterprise, a coordinated research effort to study the Earth as a global environmental system.

TOMS's data are processed at Goddard and in most cases, ozone values are mapped and made available within hours, and full global maps are usually available within 24 hours.

These data, including color images of the global ozone, are available over the Internet on the TOMS home page at: <http://jwocky.gsfc.nasa.gov/>

AIAA Space Systems Award

Once again I have the pleasure to pass along good news to you. The American Institute of Aeronautics and Astronautics (AIAA) Honors and Awards Committee Chairman informed us that the Landsat Project Government /Industry Team has been selected to receive the prestigious AIAA Space Systems Award for 1999.

The citation for this recognition reads: "For outstanding team work and accomplishment in developing the latest and most advanced in the Landsat Series of Earth Remote Sensing Spacecraft".

This news comes as the Landsat spacecraft is declared operational and data is made available to the public, demonstrating teamwork among industry and government agencies to achieve excellence and provide a wealth of new products for users around the world. Looking at our 40-year history, the Landsat series is often quoted as the most remarkable and useful tool to citizens for making wise resource management decisions. The April 1999 safe launch of Landsat 7 adds to the Nation's treasures of sophisticated remote sensing tools and another jewel in the crown of the Earth Observing spacecraft.

Congratulations to the Landsat Team under Phil Sablehaus; folks of Lockheed Martin Missiles and Space; Raytheon Systems Company and R.J. Thompson of the U.S. Geological Survey.

Many people dedicated hours to ensure a safe and successful mission, waited patiently as launch dates changed and expertly implemented every step in the architecture, analysis and design of the onboard systems in the face of tough challenges.

Thank you for your teamwork and innovations, values the Goddard Center cherishes. Job well done!

A. V. Diaz

Mobile Mammogram Unit Visits Wallops Sept. 8

Mammograms are a good screening tool to detect breast cancer while it's still small enough to be easily treated.

A mammogram is an x-ray film of the breast used to detect tumors and cysts. There are two types of mammograms. A screening mammogram is used for women without symptoms and a diagnostic mammogram is used for women with abnormal breast changes. Although a mammogram can detect 90-95% of breast cancers it is not perfect.

Digital mammography collects the x-ray image of the breast and stores it in a computer. The computer scans every part of the mammogram. Any suspicious areas are reported for further review. This procedure improves reading quality of the mammogram image.

Many women are concerned about the risk posed by the radiation from the mammogram. The dose is very small. If you are concerned about this risk or have other radiation exposures, you should discuss this with your physician.



Women are advised to have a baseline mammo-gram between the ages of 35-40 and mammograms after age 40 at intervals determined by the woman and her physician. As important as mammograms are, monthly breast self-exams are even more so. Have your health care provider teach you how to do these, and do them on a regular basis.

For any woman who has discovered a lump in her breast, an immediate examination by a gynecologist is recommended. While most lumps are benign cysts or tumors, there is always a small chance of it being cancerous. The gynecologist can determine what testing is needed to diagnose the lump. See your doctor right away.

Events at the Visitor Center During September

On Sept. 18, a model rocket launch will be held at 1 p.m. The launch will be canceled if it is raining or winds exceed 18 mph.

"Puppets in Space" will be presented at 11 a.m. on Saturdays and Sundays and at 2 p.m. Monday through Friday through Labor Day. After Labor Day the puppet show will only be presented at 11 a.m. on Saturdays and Sundays.

"Humans in Space" is the subject of a 1 p.m. program on Sundays for children of all ages.

Children ages 5-10 years can earn a "Space Ace" certificate and a lithograph by completing an activity sheet.

The Visitor Center is open Thursday through Monday from 10 a.m. to 4 p.m. For further information, please call (757) 824-2298.

Monthly Weather Summary Dennis the Menace

by Ted Wilz, Senior Meteorologist

The Atlantic tropical season is finally in full swing as Tropical Storm Dennis seems to have taken up permanent residence in our area. Like many a "come here" to the Eastern Shore, Dennis seems to have taken a liking to the Mid Atlantic Coast. Dennis caused beach erosion problems from New Jersey through the Carolinas. Weak upper level steering winds and a blocking ridge of high pressure off the New England coast caused this intruder to hover around the area without leaving any meaningful rainfall that we would be grateful to have considering the dry summer we've had so far.

Although the summer has been very dry so far, August was actually a somewhat average month, rainfall wise, as we had nine days with measurable precipitation totaling 3.63 inches. Although that is only 1 inch below our monthly average, we're still over three inches behind our yearly average. October and November is the driest two-month period of the year, so whatever rainfall we can sponge during the peak tropical season in September would be most beneficial. October only averages 2.89 inches of rainfall from seven rainfall days.

The cloudy, cool weather that has been around during the end of August almost makes one forget what a warm and pleasant August we've had until Dennis entered the picture. August was actually above average, temperature-wise, averaging 83.9° for high temperatures and 68.2° for low temperatures, which is 7° above normal. The high temperature for the month was the 96° reading on August 1, which tied the record high for the date. No new record lows were set for the month. October shows significant "cool down," as average highs are in the low 70's at the beginning of the month and the low 60's by month's end. Low temperatures average in the mid 50's at the beginning of October, but as November approaches, they are usually in the mid 40's. October's record high has nearly reached 90° at the beginning of the

Beach Cleanup



Sept. 18

Call x1584 to volunteer.

News from FEDweek Deadline Passes, Clinton Mum on 2000 Pay Raise

President Clinton did not offer an alternative federal pay raise amount by the legal deadline (Aug. 31) that could have sealed a 2000 pay raise for federal employees of 4.4 to 4.8% then and there. This has created uncertainty for federal workers who were expecting him to approve one or the other figure. Though his action across the board raises at a statutory 3.8% (based on changes in the Employment Cost Index minus half a percentage point), this does not necessarily mean that federal employees will be "shortchanged" come January.

Congress still could approve a higher raise. Also, Clinton has until Nov. 30 to decide what additional amount will be paid in locality adjustments. If he later approves locality adjustments amounting to, for example, an additional 0.6%, the total average increase ultimately would be 4.4% anyway, though the combined national and locality raises would vary by location.

month and the record low for October occurred on the 28th in 1976 when the mercury reached 28°! So it is not too early to think about getting some firewood dried out and ready for the cold winter months ahead.

With Tropical Storm Dennis making a nuisance of himself, but otherwise not providing a real hazard to life and property along the coast, it would be easy to let down your guard for future tropical storm and hurricane events. We should remember that Dennis has caused erosion and flooding problems while still located well off the coast, and having decreased significantly in intensity. Future, stronger storms, moving closer to us are a possibility, and we should not let our guard down due to the somewhat docile, persistent, nuisance-like presence of our current visitor, Dennis. The next storm may provide much greater hazards, and we need to remember to keep well prepared with emergency supplies and evacuation plans. The National Hurricane Center is still calling for 14 named storms this year, and so far, we've only had 5!

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees.

Editor Betty Flowers
Photography Optical Section
Printing Printing Management Office